Overview of Bind Code Testing Methodology.

1. Bind code is unable to be recovered on FlySky transmitter. There are multiple places where this code could be stored on the transmitter and not all of them are accessible.
2. On the receiver, there exists an EEPROM which can be read using a commercially available eeprom reader.
3. This EEPROM contains a value that changes when a receiver is bound to a transmitter to which it is not currently bound.
4. If you rebind the receiver with the transmitter to which it is currently bound, this value does NOT change.
5. If you bind a transmitter to multiple receivers, the same value is written to each of the receivers.

Testing process.

Three components were identified in the system.

1. Transmitter
2. Receiver circuit board
3. Receiver EEPROM

When following the manufacturers instructions, a transmitter and receiver were bound. It was observed that when the receiver was powered on in bind mode (using the supplied bind jumper), the LED on the receiver would flash rapidly. Holding down the bind button on the transmitter and powering it on would successfully bind the transmitter and receiver. Once this occurred, the LED on the receiver would turn solid red. Binding was confirmed by connecting an ESC and confirming the output was responding to throttle commands from the transmitter. It was observed that when the output of the ESC was being engaged, an LED on the ESC would also turn on. This same LED would turn off when the command from the transmitter was turned off.

First, the initial data on each EEPROM was read. Then,Each EEPROM was initialized (data was written to them) with two sets of known data. The first set was all 00's, the second set was all FF's. (in the world of data being 1's and 0's, I wrote all 0's the first time and all 1's the second time). After each of these initializations, the EEPROMs were placed in their respective receivers and the bind process was done.

FACT: After each of these processes, the same four bytes of data were read from the EEPROM. This tells us that the bind process results in the same, repeatable data being written to the EEPROM.

Next, the process was repeated using a different transmitter.

FACT: Once again, four bytes were written to the EEPROM in both tests and they were both the same. However, they were different than the values from the first transmitter.

Conclusion: The data stored on the EEPROMs following the bind process is 4 bytes long. Each time a transmitter is bound with a receiver, the SAME 4 bytes appear on the receiver to which it has been bound.

After this, the EEPROMs were swapped between the receivers and the they were each initialized and bound with transmitter 2.

FACT: The data was identical to the data read from the first EEPROM.

Conclusion: Neither the receiver or the EEPROM located within it effect the value stored in the bind process. This value must be originating from the transmitter.

Functional testing.

Many different bind codes were written manually to a test receiver using an EEPROM programmer. Each time a new bind code was written to it, it was tested to see if it reacted to either of my exemplar transmitters. The only time either transmitter was able to successfully send a command was when the exact bind code it had sent previously had been manually programmed into the receiver. In all other instances, the receiver would exhibit a slow blinking light (waiting for my transmitter) and no output would be sent from the ESC.